



# Advisory

## Storage Buying Criteria for Small/Medium Enterprises

### *Introduction*

Five criteria usually dominate storage purchase decisions in the small/medium-sized enterprise (SME) marketplace. They are:

1. Product features/functionality;
2. Cost;
3. Reliability;
4. Service; and,
5. Support.

The reasons that these criteria dominate this marketplace are perfectly logical. Product features/functions determine if a storage subsystem can meet a particular SME's business requirement. If a given product meets the business functional requirement, SMEs then focus on cost (SMEs are extremely cost conscious especially when it comes to capital expenditures such as the purchase of information technologies). But cost alone is not usually the final determining factor when choosing a storage subsystem. SMEs have a very low tolerance for system/subsystem failures (because failures can lead directly to lost revenue). Hence, reliability overrides the desire to purchase the least expensive storage solution. And, should a failure occur, SMEs require fast service (again, because malfunctions can lead directly to lost revenue). Finally, strong vendor support is crucial for SMEs, because SMEs frequently don't have deeply skilled technical expertise available on site to perform troubleshooting, maintenance, and optimization tasks.

Using the above mentioned criteria, SME's often find that their final "short list" of vendors includes storage products from EMC and IBM. Both companies offer solid products; hardware/software costs are, for the most part, similar (although IBM usually has an advantage in total-cost-of-ownership); both vendor's products are highly-reliable; and both companies offer solid service and support. So, when choosing between these two vendors, what criteria should be used to determine which company and product offering best suits an SME storage need?

In this *Advisory*, *Clabby Analytics* (that's me) discusses some of the differences between the EMC and IBM storage portfolios. And those differences can be found in each company's:

- Storage strategy;
- Sales and marketing approach;
- Hardware/software portfolios; and,
- Service/support offerings (especially in the breadth and depth of services offered, and in service tools and technologies).

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### *A Closer Look: Comparing Each Company's Storage Strategy*

There are huge differences in the way that EMC and IBM approach the storage marketplace. EMC's primary goal is to sell mainly disk-based storage subsystems and related services. IBM's goal, on the other hand, is to sell integrated systems (e.g., servers, storage, infrastructure, databases and related services).

EMC is a maker of storage products as well as a provider of virtualization and document/information management software. In storage, the company's strategy is simple: sell storage period. EMC does not make systems/servers, nor operating environments, nor databases, nor development environments. It makes storage hardware and storage management software. So, for customers who just want just disk-oriented storage products and are willing to perform the work needed to integrate those storage products with systems environments, EMC can provide a wide range of storage solutions.

IBM, on the other hand, is a systems/infrastructure/operating environment/database/-management software/storage maker as well as a professional services provider. Accordingly, IBM can deliver completely integrated, turnkey systems/storage environments, complete with end-to-end infrastructure and management software and related services.

*The primary difference in market positioning between EMC and IBM can be found in the level of product integration that each company provides. Both EMC and IBM can sell point storage solutions for de-duplication, remote mirroring, disk virtualization, scale-out file systems, and so on). But IBM also offers turnkey storage solutions that readily integrate with IBM infrastructure, systems, and management products.*

### *A Closer Look: Comparing Each Company's Sales/Marketing Approach*

EMC sells storage directly to its customers and quite often partners with systems makers (such as Sun, HP, and even IBM) when customers require more integrated systems/-storage/infrastructure/management solutions. IBM can also sell just storage to its customers but, because IBM makes complete, integrated systems environments, IBM does not need to partner with other suppliers to deliver storage solutions.

From a marketing perspective, EMC is, without a doubt, one of the information technology (IT) industry's strongest marketing companies. EMC communicates constantly with its customers and with the press and produces a steady flow of information on its products, on its new developments, and on its new centers-of-excellence, et al. Further, EMC constantly monitors its customer base to measure customer satisfaction as well as to detect problems or market shifts (and the feedback it gets helps EMC fix problems, tweak products, and/or create new products).

Further, EMC's sales force is known industry wide as storage-knowledgeable and is known for being *very aggressive* in its pursuit of storage sales. But, when customers require solutions that involve systems integration or process flow solutions, EMC's sales force lacks the depth needed to orchestrate broader solutions.

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On the downside, EMC's marketing strategy has been described by research analysts and customers alike as "proprietary" and "lock-in" oriented. On the proprietary front, EMC has embraced several industry standards that can allow for multivendor storage subsystem interoperability (such as the SMI-S open API, for instance). On the other hand, EMC continues to focus on enriching its own application program interface (API) formerly known as WideSky (now known as "Solutions Enabler"). As a result of EMC's slowness to adopt open APIs, as well as EMC's continued development of its own proprietary API, some industry analysts and customers see EMC's support for open storage standards as "less-than-aggressive". Several customer perspectives on the lock-in aspect of EMC's marketing plan can be found on the Web.

As for IBM, back in the early 1990s, IBM's strategy in storage was clearly a lock-in strategy. Customers had little alternative than to buy storage from their systems supplier at high prices. It was this exact behavior that made room for the EMCs of the industry.

Today, IBM is seen as a champion of open storage due to its aggressive contributions to the open standards process and its rapid adoption of those standards. And IBM is also seen as a champion of cross-platform storage management (its SAN Volume Controller multivendor storage management environment has received rave reviews from IBM customers and sales of this product have been outstanding). IBM has even packaged SAN Volume Controller in a "lite" version that can be used to serve the SME marketplace.

As for its sales force, IBM's direct sales organization can sell just storage solutions if a customer so desires — but also has access to a wealth of other IBM expertise in systems, networks, databases, etc. — which enables IBM direct sales to sell broad, integrated IT solutions.

### *A Closer Look at EMC's and IBM's Storage Hardware/Software Portfolios*

From a hardware perspective, there are many similarities in each vendor's storage portfolio. But, from a software perspective, there are huge differences in each company's software focus, packaging, and depth.

#### *Hardware*

EMC and IBM hardware offerings are generally very similar. Each company offers a broad range of disk arrays; each offers strong NAS (network attached storage) products; and each company offers solid storage area network products. Still, some differences in product offerings and product focus can be found between these two companies. For instance, EMC builds its own NAS products while IBM remarkets Network Appliance NAS storage devices. Another example is that IBM builds its own tape products while EMC remarkets Quantum's tape line.

In NAS, NetApp and EMC are generally considered to be the two market leaders both from a market share and product breadth perspective. But there are trade-offs in these NAS offerings. For instance, EMC argues that its NAS products offer better total-cost-of-ownership after three years when compared to IBM's N series (NetApp) offering. On the other hand, EMC's NAS gateways appear to be limited to support for EMC disk systems

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only. But, from a practical perspective, the EMC and NetApp (therefore IBM) products are generally more-or-less equivalent.

Both vendors offer tape solutions, but IBM promotes tape more aggressively than EMC (EMC generally downplays tape in favor of more-costly disk). For SME customers who cannot afford the expense of a remote data center for disaster recovery, sending tapes offsite to a third party for disaster recovery protection is still a favored alternative. (Yes, the time to restore is longer, but in a true disaster, businesses are cut a good deal of slack when restoring data). Tape is more energy-efficient than disk (as an idle tape does not use energy, but a spinning disk does even if not accessed). In addition, the overall tape infrastructure is still more cost efficient than a disk infrastructure for data protection purposes. Moreover, IBM has a rich heritage in tape at all levels — tape automation, tape drives, and tape media. That enables IBM to be an innovation leader in tape technology. SME organizations benefit from that IBM strength in half-height tape drives (the TS2240 Tape Drive Express) that gives useful space savings while preserving the essential tape drive functionality that these businesses demand.

From a storage-area-network (SAN) perspective, both companies have a flotilla of SAN offerings, all comparably priced and with similar functionality.

Vendors always try to compose a good total-cost-of-ownership (TCO) story. And IBM has a very good story to tell for the SME market in terms of warranty. IBM's DS8000 offers an optional 1, 2, 3, or 4 year warranty, while other IBM storage products offer different warranties. EMC's Symmetrix and CLARiiON have standard 2 year warranties — but only a 90 standard warranty on software features.

### *Storage Management Software Portfolios*

EMC and IBM storage management software offerings are very similar in terms of functionality (except in the area of heterogeneous storage management). Both companies offer software that provides archiving and back-up/recovery functionality. Both offer products that manage storage resources; that enable performance tuning; that ensure security; and that allow for data replication. IBM's storage management offerings, however, differ greatly from EMC in terms of heterogeneous interoperability.

EMC, as one would expect, covers all of the bases when it comes to the management of storage environments. EMC's storage management product offerings include archiving, back-up and recovery, EMC Select (3<sup>rd</sup> party products), IT resource management, replication, security, software development, storage management, performance tuning, and virtualization functionality. Further, EMC's ControlCenter storage management environment includes a separately priced automated resource manager, a performance manager, a SAN advisor and manager, StorageScope and a StorageScope file level reporter.

IBM's TotalStorage Productivity Center (TPC) storage management environment provides capabilities such as storage reporting, monitoring, policy-based management and storage provisioning. TPC functionality includes basic asset and capacity reporting, storage management for pooled or virtualized SAN environments, integrated administration,

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performance analytics, capacity utilization, storage optimization, green tools, and replication features for virtualized storage environments. Additionally, IBM's TPC provides a set of policy-driven, automated tools for managing storage capacity, availability, events, performance and assets, including DAS, NAS and SAN technologies. And TPC products can be used to help automate the management of heterogeneous storage networks and works with a broad range of devices as well to monitor and automate copy operations across devices to support a replication environment.

Both EMC and IBM can go toe to toe in products for the SME marketplace. But IBM differs from EMC in SME in two critical ways:

1. For businesses with standard storage requirements, IBM has targeted products (the IBM System Storage DS3000 Series and the IBM System Storage DS4700 Express) as part of its Express Advantage program that combines hardware, software, services, and financial solutions. These products compete head-on with EMC's CLARiiON CX4 but are turnkey, tightly-packaged solutions.
2. For SMEs who require a ton of storage IBM offers its IBM XIV System Storage architecture, which is a storage architecture specifically crafted for the 21<sup>st</sup> century, in contrast to CLARiiON, which can trace its heritage back to the 1990s. For those customers who can take advantage of XIV, the differences are enormous. An XIV system automates data placement to optimize performance and availability. This means that users need minimal awareness of internal design that leads to a level of ease-of-management that cannot be claimed by competitive solutions. But that is not all. The time to restore disk redundancy protection if a 1 TB disk fails is typically less than 30 minutes as compared to several hours in a standard architecture. And the list goes on — proactively eliminating hot spots, consistent response times, and migration assists — all contribute to the value and usability that make the XIV architecture attractive.

Despite commonalities in each vendor's storage management portfolios, there is one major dissimilarity: heterogeneous storage management through virtualization. IBM's System Storage SAN Volume Controller (SVC) is a product offering designed to provide a single point of control for managing heterogeneous storage resources. SVC pools storage volumes from IBM and not-IBM systems, creating a reservoir of storage capacity that can be exploited by users and applications. SVC is designed to virtually consolidate capacity from different storage systems, helping to provide common copy functions and enable data movement without server disruption, while supporting management of diverse storage from a single administrative console.

***SAN Volume Controller highlights one major difference in storage management between IBM and EMC — heterogeneous storage management. EMC primarily focuses on the management of EMC storage; IBM focuses on the management of IBM storage as well as the storage devices of other vendors.***

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### *Information Management Software Portfolios*

When an SME buys storage, that SME often thinks: “all I need is some additional disk space”. But treating storage as simply additional disk space is shortsighted. Storage devices hold the lifeblood of an enterprise: its information and data. Failure to manage that information and data properly can result in process flow inefficiencies, lost revenue growth opportunities and even worse: criminal prosecution (by failing to comply with legal record-keeping requirements).

Both IBM and EMC offer information management products and services. But each company differs in the way it packages its solutions; and in breadth and depth of its respective information management offerings. When comparing EMC’s information to IBM’s corresponding information management site, it becomes immediately obvious that IBM’s information management portfolio is both broader and deeper than EMC’s portfolio.

EMC offers numerous products that can be used to manage content and information. From a content management perspective, EMC provides software that can be used for collaboration and document management, for compliance, security, digital asset management, document capture, report management, Web content management and transaction content management. EMC’s intelligent information management products include DiskXtender, EMC Rainfinity file virtualization, and Documentum IRM services.

In information management, IBM has organized all of its product offerings under one common heading: *Information Infrastructure*. Information Infrastructure focuses on providing solutions that address four key information management themes:

- 1) compliance;
- 2) availability;
- 3) retention; and,
- 4) security.

To address each theme, IBM provides a wealth of software offerings (literally hundreds of products) as well as related services. Software offerings include business process management, collaboration software, content management, data management, disaster recovery/business continuity, distribution management, energy efficiency, enterprise application integration, enterprise architecture, IT cost management, security, systems management, virtualization, and workforce productivity. Software in each of these categories can be used to help enterprises more efficiently manage their information.

***It can easily be argued that IBM’s information management portfolio is better integrated, broader, and deeper, and more turn-key than EMC’s information management portfolio. As part of its Information Infrastructure solution set, IBM has 140+ industry specific assets; over 50 performance management tools/utilities, 45+ enterprise content management offerings; 45+ InfoSphere offerings across 6 industry models, 30 information intensive application environments with more than 10 Global Business Services professional service offerings.***

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In addition to its many information management software offerings, IBM has also created industry-specific “accelerators” designed to speed deployment of information management solutions (see Figure 1). These accelerators are fully integrated, turnkey solution sets that consist of both hardware and software offerings.

**Figure 1: IBM Information Accelerators**

The screenshot displays the IBM Information Accelerators website. The header includes the IBM logo and the text "Information Management Software" and "Information Accelerators". Below the header, there is a "New" badge and the tagline "Industry specific assets to speed deployment". The main content area is divided into several columns, each representing a different industry sector with a list of specific services and solutions. The sectors include Banking & Financial Markets, Government (Fed. & Central), Healthcare, Cross-Industry/Functional, Insurance, Government (State & Local), Life Sciences, Energy & Utilities, Industrial & Manufacturing, Transportation, Chemical & Petroleum, and Communications. Each sector's list includes various services such as risk management, program objective memorandum, clinical trial management, and more. The footer of the page shows the page number "15" and the copyright notice "© 2008 IBM Corporation".

Source: IBM Corporation — December, 2008

### Storage Services Differences

Both IBM and EMC focus strongly on providing storage-related services. The primary differences between IBM storage services and those of EMC are in:

1. The breadth of services offered (IBM has greater depth because IBM sells services that integrate storage, databases, systems, and applications);
2. The geographical coverage model (where IBM has over 190,000 people in 160+ countries in professional services, whereas EMC has only 38,000 people in its entire company); and in

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3. Annual revenue (which again works in IBM's favor because IBM 's professional services organization brought in \$36 billion in 2007 versus \$2.13 billion for EMC. Note: this is not apples-to-apples because IBM does not call out professional services related directly to storage — but IBM's sheer size and revenue generated suggest that IBM is outselling EMC in storage and storage-related professional services).

### *Summary Observations*

As stated at the outset of this *Advisory*, there are many similarities between the storage offerings of EMC and IBM. But there are also several striking differences in strategic emphasis, in storage management, in information management, and in service offerings.

Some of the biggest differences described herein include:

- **Market positioning** — EMC is positioned to sell storage components and related software and services. Like EMC, IBM can sell storage components, software, and services but IBM can also provide turnkey, integrated systems/storage solutions.
- **Software portfolios (storage management)** — EMC's software portfolio primarily consists of storage-focused management products, some information management products, and virtualization software. IBM's software portfolio includes development environments, extensive systems and storage management offerings, extensive information infrastructure management offerings, collaboration software, and much more advanced virtualization functionality than EMC.
- **Heterogeneous storage management** — IBM's SAN Volume Controller illustrates that IBM is more heavily committed to the virtualization and management of heterogeneous storage devices. And,
- **Storage services** — By virtue of providing both storage and systems integration services, IBM's services portfolio is broader than EMC's. IBM professional services organization alone has almost five times the number of people as EMC as a whole — giving IBM more people in more geographies than EMC. And IBM service revenue is substantially higher than EMCs — again highlighting the breadth and depth of IBM's professional services offerings as compared with EMC's.

Ultimately, choosing the right storage vendor should be dictated by the business need as well as by business requirements for reliability, serviceability, and resource management. SMEs should bear in mind, however, that buying storage is no longer a decision that should be based on filling a need for more disk space. SMEs also need to consider the strategic importance of storage as a means to manage enterprise information.

In the end, making the right decision should be based on vendor's product set and strategic direction, the value the vendor offers, and the relationship that the vendor is willing to establish with your small/mid-sized enterprise.

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